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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,017	08/08/2005	Kenji Tsubone	09709.0001-00000	9505

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EXAMINER	
FORD, JOHN K	

ART UNIT	PAPER NUMBER
3744	

MAIL DATE	DELIVERY MODE
07/07/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/521,017	TSUBONE ET AL.	
	Examiner	Art Unit	
	John K. Ford	3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 January 2005 and 18 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/12/05,1/3/07,5/16/06,7/25/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

The un-translated JPO office action mailed to applicant October 10, 2006 is critically important to the proper examination of this application. An English language translation or full explanation of the contents of the un-translated JPO office action mailed to applicant October 10, 2006 (in English) is required in response to this action.

Likewise, an English language translation or full explanation of the contents of the un-translated Korean patent office action mailed to applicant April 27, 2006 (in English) is required in response to this action.

If any of the European Patent Office, JPO or Korean Patent Office as well as any Chapter 2 PCT prosecution have allowed or rejected claims in any subsequent communications to the ones of record here, copies (in English) of those claims and any additional references that have been relied upon or cited by those patent offices is required in response to this office action. If no actions have been taken by any of those patent offices subsequent to their respective communications with applicant in 2006, applicant must so state that fact on the record in applicant's next response.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the nature of the first and second circulating circuits is broad to the point of being vague. To even have a "circulating circuit" would you not need at minimum some means to cause circulation? The examiner would strongly advise adding the limitations of at least a compressor (1), pressure reducing device (6) and heat exchangers to make the first circulating circuit of claim 1 an operative vapor compression refrigeration circuit to make the claims commensurate in scope with the disclosure (some of these components are currently recited in claim 14). If applicant does not do this, applicant is put on notice that many references having little to do with applicant's field of endeavor may be used in the future by the examiner to reject claims with a resulting protracted prosecution. In the last line of claim 1 "the air" is claimed. Which of the "airs" recited only in the preamble (at present) are you referring to? Is it the heated air or the cooled air?

In claim 2, it is unclear what is meant by "different ..... in heat exchange characteristics." How are the first and third heat exchangers different? Is the third heat exchanger in one of the aforementioned "circulating circuits." If so, which one? The "controller" recitation in claims 2, 3, 15, 16 17, 18 and 23 is unsupported by any "means for" recitation and therefore treated consistent with MPEP 2114, incorporated here by reference. Note that in claim 10 applicant does use the proper format and the examiner would strongly suggest applicant do so in claims 2, 3, 15, 16, 17, 18 and 23.

In claim 3, the "more excellent" recitation is, aside from being awkward English, vague. How is it "more excellent in heat exchange characteristics"?

In claim 5, applicant has denoted element 8 a first heat storing device. In claim 2, the same exact element 8 was denoted a heat exchanger. This renders both claims 2 and 5 vague. Which is it, heat exchanger or heat storing device? In claim 5, two more circuits (in addition to those recited in claim 1) have been added. Are these the same circuits recited in claim 1, or different ones? Make the claim clear.

In claim 6, applicant changes the control function over to the selector (27). By disclosure selector 27 is a three-way valve. The control function claimed in claim 6 is performed by a controller 33 (see claim 3) not the valve 27. The claim is not descriptive and hence vague.

In claims 7 and 21, it is unclear why parentheses appear around "circulating".

In claim 11, isn't element 28, by disclosure, a pump? Claim 11 is not descriptive.

In claim 12, the "high-temperatured first heating medium" is without antecedent basis.

Claim 13 is an improper multiple dependent claim, as a multiple dependent claim can not depend from another one and claim 13 depends (indirectly) from claim 11.

Claims 16 and 17 are claiming a step in a program as a "device". See the discussion of the claimed "controller" above. A supporting "means for" recitation is all but required.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-24 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a first circulating circuit comprising a vapor compression refrigeration system, does not reasonably provide enablement for any other type of heating or cooling system. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or operate the invention commensurate in scope with these claims.

The examiner would strongly advise adding the limitations of at least a compressor (1), pressure reducing device (6) and heat exchangers to make the first circulating circuit of claim 1 an operative vapor compression refrigeration circuit to make the claims commensurate in scope with the disclosure (some of these components are currently recited in claim 14). Other than a vapor compression refrigeration system applicant has not disclosed any other means to generate the heating and cooling that is at the heart of applicant's invention. Moreover, if applicant does not do this, applicant is put on notice that many references having little to do with applicant's field of endeavor may be used in the future by the examiner to reject claims with a resulting protracted prosecution.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Karl US 2001/0020529.

The Supplementary European Search Report completed March 24, 2006 submitted by applicant for consideration is incorporated here by reference by way of explanation. See Figure 2 of Karl. A “first circulating conduit” 34 is shown. A “second circulating conduit” 4 is shown. A “first heat exchanger” 17 is shown. A “second heat exchanger” 21 is shown. A selector (comprised of valves 26 and 30) selectively flows the second medium through the “first heat exchanger” 17 or the “third heat exchanger” 21.

With regard to the last limitation in claim 2, while no “controller” is explicitly disclosed in Karl, it would be unreasonable to assume that the complex algorithm disclosed by Karl for controlling valves 26 and 30 would be done by anything other than a condition responsive automatic controller.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karl as applied to claims 1-3 above, and further in view of Likitcheva.

The Supplementary European Search Report completed March 24, 2006 submitted by applicant for consideration is incorporated here by reference by way of explanation. The EPO apparently relied on Likicheva to teach a counter-flow heat exchanger using two fluid paths as shown in the "CONDENSOR" in Figure 1 of Likicheva. The undersigned also relies on Likicheva to teach a counter-flow heat exchanger using two fluid paths as shown in the "CONDENSOR" in Figure 1 of Likicheva. To have made either or both of heat exchangers 17 and 21 of Karl as a counter-flow type to improve heat exchange would have been obvious to one of ordinary skill. Counter-flow heat exchange is known to be more efficient than cross-flow or co-current flow as any basic heat transfer text will corroborate.

Claims 1, 5, 6 and 11 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 8-49934.

The un-translated JPO office action mailed to applicant October 10, 2006 is incorporated here by reference by way of explanation and whatever rejection of the claims that is made there is also incorporated by reference here, primarily to obtain a translation. An English language translation or full explanation of the contents of the un-translated JPO office action mailed to applicant October 10, 2006 (in English) is

required in response to this action. This examiner is attempting to make patentability determinations consistent with and/or cognizant of what his colleagues around the world are doing.

To the extent that the examiner understands the JPO office action it appears that Figure 1 of JP 8-49934 discloses the claimed subject matter of at least claims 1, 5 and 6. A first circulating circuit appears to be shown connected to the inlet and outlet ports of compressor 2. A first heat exchanger "HEX" is shown through which a second medium is circulated to a second heat exchanger 17. A third heat exchanger in storage tank "STR" is shown. A selector (comprising what appear to be valves RV1 and RV2) are controlled by a controller 20.

Claims 7-10 and 12-24 would be provisionally allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 1st and 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims and if no further office actions from corresponding foreign prosecutions are received that speak contrary to the examiner's conclusion at this point in time.

Claim 11 if amended to depend only from claim 7 (not claim 5) would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 1st and 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John K. Ford whose telephone number is 571-272-4911. The examiner can normally be reached on Mon.-Fri. 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John K. Ford/
Primary Examiner, Art Unit 3744

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